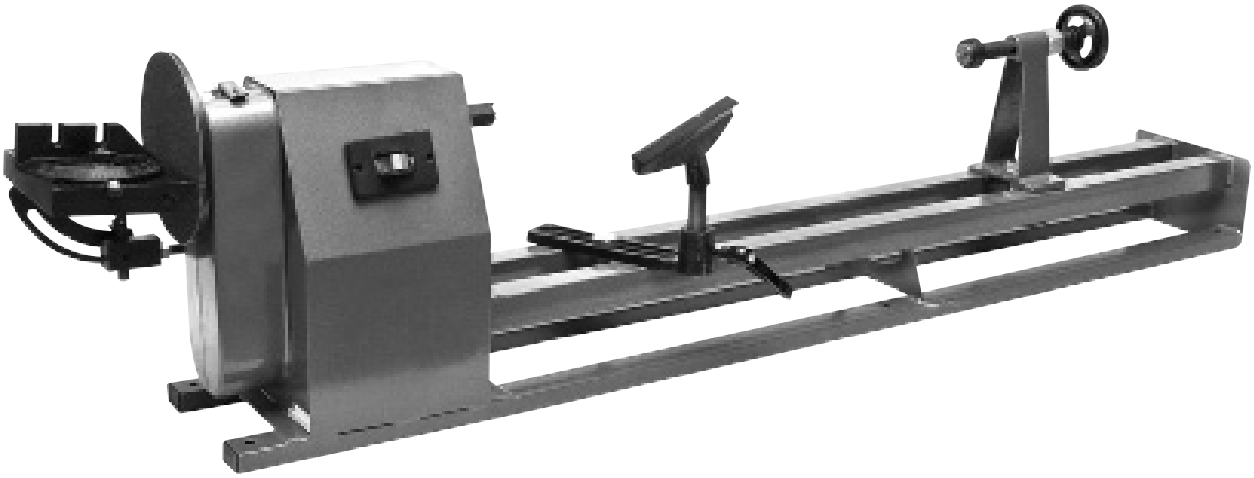
14” X 40” WOOD LATHE WITH 7” SANDER

Model 67690

SET UP AND OPERATING INSTRUCTIONS



Visit our website at: http://www.harborfreight.com

Read this material before using this product. Failure to do so can result in serious injury. SAVE THIS MANUAL.

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For technical questions or replacement parts, please call 1-800-444-3353.

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SAVE THIS MANUAL

Keep this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures. Write the product's serial number in the back of the manual (or month and year of purchase if product has no number). Keep this manual and the receipt in a safe and dry place for future reference.

IMPORTANT SAFETY INFORMATION

In this manual, on the labeling, and all other information provided with this product:

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠DANGER **DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.**

⚠WARNING **WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.**

⚠CAUTION **CAUTION, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.**

NOTICE **NOTICE is used to address practices not related to personal injury.**

CAUTION **CAUTION, without the safety alert symbol, is used to address practices not related to personal injury.**

General Power Tool Safety Warnings

WARNING Read all safety warnings and instructions. *Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.* **Save all warnings and instructions for future reference.** *The term "power tool" in the warnings refers to your mains-operated (corded) power tool.*

1. Work area safety

a. **Keep work area clean and well lit.** *Cluttered or dark areas invite accidents.*

b. **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** *Power tools create sparks which may ignite the dust or fumes.*

c. **Keep children and bystanders away while operating a power tool.** *Distractions can cause you to lose control.*

2. Electrical safety

a. **Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with grounded power tools.** *Unmodified plugs and matching*

outlets will reduce risk of electric shock.

b. **Avoid body contact with grounded surfaces such as pipes, radiators, ranges and refrigerators.** *There is an increased risk of electric shock if your body is grounded.*

c. **Do not expose power tools to rain or wet conditions.** *Water entering a power tool will increase the risk of electric shock.*

d. **Do not abuse the cord. Never use the cord to unplug the power tool. Keep cord away from heat, oil, sharp edges or moving parts.** *Damaged or entangled cords increase the risk of electric shock.*

e. **If operating a power tool in a damp location is unavoidable, use a Ground Fault Circuit Interrupter (GFCI) protected supply.** *Use of a GFCI reduces the risk of electric shock.*

3. **Personal safety**

a. **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication.** *A moment of inattention while operating power tools may result in serious personal injury.*

b. **Use safety equipment. Always wear ANSI-approved eye protection.** *Safety equipment such as NIOSH-approved dust mask/ respirator, full face shield, heavy-duty work gloves, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.*

c. **Remove any adjusting key or wrench before turning the power tool on.** *A wrench or a key left attached to a rotating part of the power tool may result in personal injury.*

d. **Do not overreach. Keep proper footing and balance at all times.** *This enables better control of the power tool in unexpected situations.*

e. **Dress properly. Do not wear loose clothing or jewelry. Keep your hair, clothing and gloves away from moving parts.** *Loose clothes, jewelry or long hair can be caught in moving parts.*

4. **Power tool use and care**

a. **Do not force the power tool. Use the correct power tool for your application.** *The correct power tool will do the job better and safer at the rate for which it was designed.*

b. **Do not use the power tool if the switch does not turn it on and off.** *Any power tool that cannot be controlled with the switch is dangerous and must be repaired.*

c. **Disconnect the plug from the power source before making any adjustments, changing accessories, or storing power tools.** *Such preventive safety measures reduce the risk of starting the power tool accidentally.*

d. **Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.** *Power tools are dangerous in the hands of untrained users.*

e. **Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use.** *Many accidents are caused by poorly maintained power tools.*

f. **Keep cutting tools sharp and clean.** *Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.*

g. **Use the power tool and its accessories in accordance with these instructions, taking into account the working conditions and the work to be performed.** *Use of the power tool for operations different from those intended could result in a hazardous situation.*

5. Service

a. **Have your power tool serviced by a qualified repair person using only identical replacement parts.** *This will ensure that the safety of the power tool is maintained.*

Lathe Safety Warnings

1. Maintain labels and nameplates on the Lathe. These carry important safety information. If unreadable or missing, contact Harbor Freight Tools for a replacement.
2. Do not run the Lathe without its covers and guards in place.
3. Tighten all locks before operating.
4. Do not mount a split workpiece.
5. Use the lowest speed when starting a new workpiece.
6. Always stop the Lathe at its slowest speed. If the Lathe is run so fast that it vibrates, there is a risk that the workpiece will be thrown or the cutting tool jerked from your hands.
7. Always rotate the workpiece by hand before turning on the Lathe. If the workpiece strikes the tool rest, it could split and be thrown out of the Lathe.
8. Do not allow cutting tools to bite into the workpiece. The wood could be split or thrown from the Lathe.
9. Always position the tool rest above the centerline of the Lathe when shaping a piece of stock.
10. Before attaching a workpiece to the faceplate, always rough it out to make it as round as possible. This minimizes the vibrations while the piece is being turned. Always fasten the workpiece securely to the faceplate. Failure to do so could result in the workpiece being thrown away from the Lathe.
11. Remove all loose knots in the workpiece before mounting between the centers or on the faceplate.
12. Position your hands so they will not slip onto the workpiece when the Lathe is running.
13. Use a brush or compressed air to remove wood shavings; never your hands. The wood shavings will be sharp.
14. The cutting tool must always be tight within the tool post or chuck and

adjusted to limit projection from the post. This will reduce the possibility of the tool breaking or bending.

15. Avoid unintentional starting. Prepare to begin work before turning on the tool.

16. Do not reach across the Lathe while it is running.

17. Industrial applications must follow OSHA guidelines.

18. Do not use the Lathe if it is off-balance, or the workpiece is not properly centered.

19. Only feed workpiece into a cutting tool against the direction of rotation. The workpiece must always be rotating toward you.

20. Do not leave the tool unattended when it is plugged into an electrical outlet. Turn off the tool, and unplug it from its electrical outlet before leaving.

21. This product is not a toy. Keep it out of reach of children.

22. People with pacemakers should consult their physician(s) before use. Electromagnetic fields in close proximity to heart pacemaker could cause pacemaker interference or pacemaker failure. In addition, people with pacemakers should:
    • Avoid operating alone.
    • Do not use with power switch locked on.
    • Properly maintain and inspect to avoid electrical shock.
    • Any power cord must be properly grounded. Ground Fault Circuit Interrupter (GFCI) should also be implemented – it prevents sustained electrical shock.

23. Some dust created by power sanding, sawing, grinding, drilling, and other construction activities, contains chemicals known [to the State of California] to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:
    • Lead from lead-based paints
    • Crystalline silica from bricks and cement or other masonry products
    • Arsenic and chromium from chemically treated lumber
    Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles. (California Health & Safety Code § 25249.5, *et seq.*)

24. The warnings, precautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

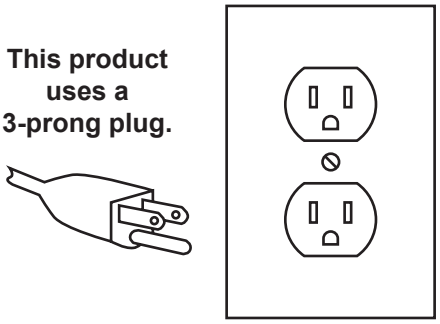
SAVE THESE INSTRUCTIONS.

GROUNDING

⚠WARNING TO PREVENT ELECTRIC SHOCK AND DEATH FROM INCORRECT GROUNDING WIRE CONNECTION:

Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded. Do not modify the power cord plug provided with the tool. Never remove the grounding prong from the plug. Do not use the tool if the power cord or plug is damaged. If damaged, have it repaired by a service facility before use. If the plug will not fit the outlet, have a proper outlet installed by a qualified electrician.

Grounded Tools: Tools with Three Prong Plugs



3-Prong Plug and Outlet

1. Tools marked with "Grounding Required" have a three wire cord and three prong grounding plug. The plug must be connected to a properly grounded outlet. If the tool should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user, reducing the risk of electric shock. **(See 3-Prong Plug and Outlet.)**
2. The grounding prong in the plug is connected through the green wire inside the cord to the grounding system in the tool. The green wire in the cord must be the only wire connected to the tool's grounding system and must never be attached to an electrically "live" terminal. **(See 3-Prong Plug and Outlet.)**
3. The tool must be plugged into an appropriate outlet, properly installed and grounded in accordance with all codes and ordinances. The plug and outlet should look like those in the preceding illustration. **(See 3-Prong Plug and Outlet.)**

EXTENSION CORDS

1. ***Grounded*** tools require a three wire extension cord. ***Double Insulated*** tools can use either a two or three wire extension cord.
2. As the distance from the supply outlet increases, you must use a heavier gauge extension cord. Using extension cords with inadequately sized wire causes a serious drop in voltage, resulting in loss of power and possible tool damage. **(See Table A.)** The smaller the gauge number of the wire, the greater the capacity of the cord. For example, a 14 gauge cord can carry a higher current than a 16 gauge cord. **(See Table A.)**
3. When using more than one extension cord to make up the total length, make sure each cord contains at

least the minimum wire size required. **(See Table A.)**

4. If you are using one extension cord for more than one tool, add the nameplate amperes and use the sum to determine the required minimum cord size. **(See Table A.)**
5. If you are using an extension cord outdoors, make sure it is marked with the suffix “W-A” (“W” in Canada) to indicate it is acceptable for outdoor use.
6. Make sure the extension cord is properly wired and in good electrical condition. Always replace a damaged extension cord or have it repaired by a qualified electrician before using it.
7. Protect the extension cords from sharp objects, excessive heat, and damp or wet areas.

RECOMMENDED MINIMUM WIRE GAUGE FOR EXTENSION CORDS* (110 VOLT)					
NAMEPLATE AMPERES (at full load)	EXTENSION CORD LENGTH				
	25’	50’	75’	100’	150’
0 – 2.0	18	18	18	18	16
2.1 – 3.4	18	18	18	16	14
3.5 – 5.0	18	18	16	14	12
5.1 – 7.0	18	16	14	12	12
7.1 – 12.0	18	14	12	10	-
12.1 – 16.0	14	12	10	-	-
16.1 – 20.0	12	10	-	-	-
TABLE A	*** Based on limiting the line voltage drop to five volts at 150% of the rated amperes.**				

SYMBOLOGY

	Double Insulated
	Canadian Standards Association
	Underwriters Laboratories, Inc.
V~	Volts Alternating Current
A	Amperes
n_0 xxxx/min.	No Load Revolutions per Minute (RPM)

SPECIFICATIONS

Electrical Requirements	120 V~ / 60 Hz / 1.8 A
Maximum Stock Length/Diameter	40” Long, 14” Diameter
Lathe Type	Wood Cutting Turning
Motor	1/2 HP @ 1800 RPM
Operating Speeds (4)	930 RPM 1500 RPM 2050 RPM 2500 RPM
Swing Over Bed	13-13/16”
Tail Stock Quill Travel	3-1/8”
Tool Rest Width	11-7/8”
Drive Method	Belt & Pulley
Belt Type	Rubber V-type 8-510
Worktable	7-3/8” W x 4-7/8” Deep
Power Cord	(E21210 & 215550) 1 PAWG/3C 105°C STT
Accessories	Miter Gauge (Qty. 1) Spanner Wrench (27mm) (Qty. 1) Sanding Disc (Qty 3, 60, 80 and 100 grit)

UNPACKING

When unpacking, check to make sure that the item is intact and undamaged. If any parts are missing or broken, please call Harbor Freight Tools at the number shown on the cover of this manual as soon as possible.

ASSEMBLY INSTRUCTIONS

Read the ENTIRE IMPORTANT SAFETY INFORMATION section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

⚠WARNING TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:
Turn the Power Switch (14) of the Lathe to its “OFF” position and unplug the tool from its electrical outlet before assembling or making any adjustments.

Note: For additional information regarding the parts listed in the following pages, refer to the Assembly Diagram near the end of this manual.

NOTE: This Lathe requires partial assembly.

1. To attach the Faceplate (9) to the Main Spindle (2), loosen the Drive Center (8) and remove it from the Spindle. Do this by using the Spanner (70) to hold Main Spindle in place. Then use a wrench (not included) to loosen and remove the Drive Center. See Figure 1, below.

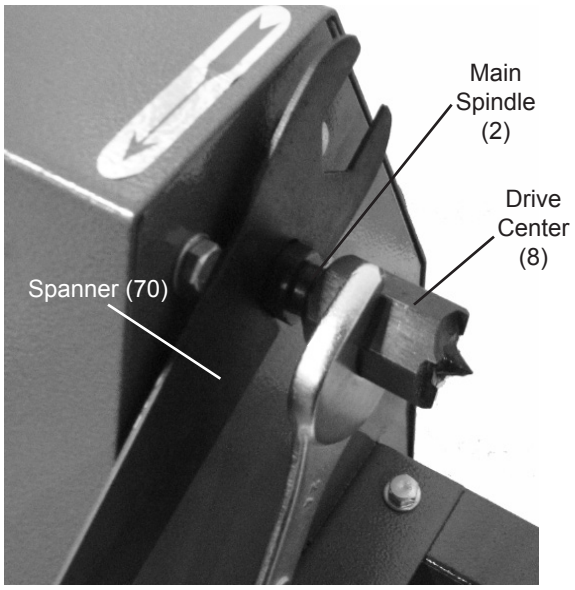


Figure 1

2. Once Drive Center is removed, thread Faceplate onto Main Spindle and hand-tighten only. See Figure 2.

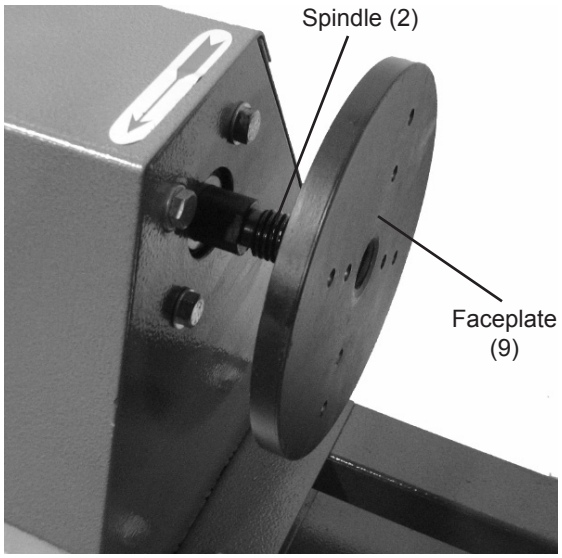


Figure 2

3. To attach Sanding Disc (34), align flat Set Screw (55) at the back of Sanding Disc with the flat face of Spindle and then slide Disc over Spindle. Then use Hex Wrench (71) to tighten Set Screw. See Figure 3, below.

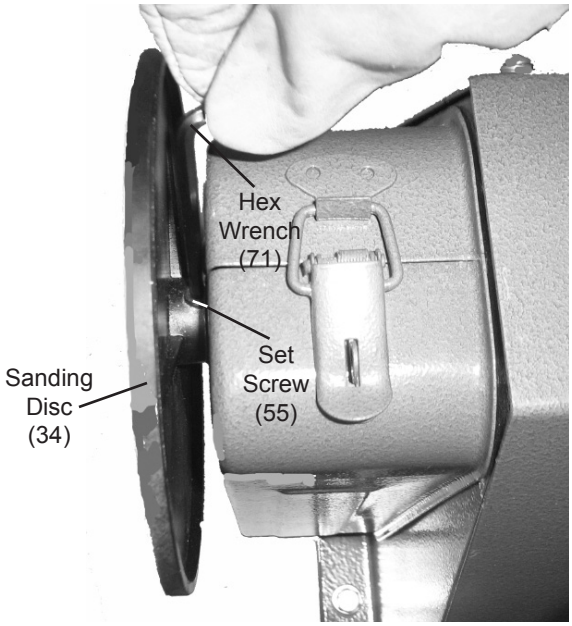


Figure 3

4. To install Work Table (36), slide Table Bracket (39) into slot on the belt housing. Then use Set Screw and Hex Wrench to fasten the Bracket. See Figure 4.

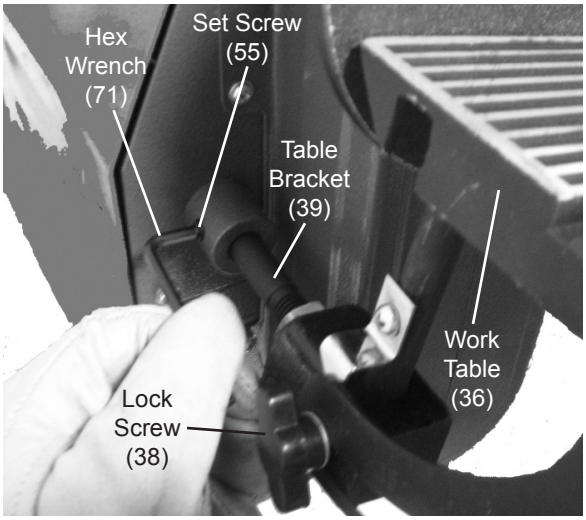


Figure 4

5. Use the Lock Screw (38) to secure Table Angle Gauge (37) to the Work Table. See Figure 4.

6. Once the Work Table is secured, set the Miter Gauge (43) onto the Work Table by sliding the Miter Gauge Slider (46) into the groove on the Work Table. See Figure 5, below.

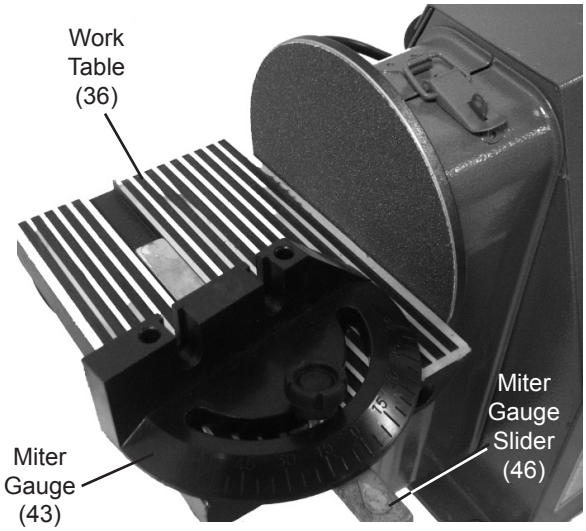


Figure 5

7. To install Tail Stock (24), set Tail Stock on far end of Lathe with Hand Wheel facing away from Head Stock. Set Bottom Plate (18) under Tail Stock and below Lathe. Slide Lock Screw through Tail Stock and Bottom Plate and secure using Nut (30).

8. To install Tool Rest, set Tool Rest Holder (20) on middle of Lathe. Set Bottom Plate under Tool Rest Holder and below Lathe. Slide Lock Screw through Tool Rest Holder and Bottom Plate and secure using Nut (30).

WORK AREA SET UP

1. Lathe will need to be located on surface capable of bearing combined weight of Lathe and intended workpieces. The surface must be able to withstand vibration generated by the Lathe during operation.

2. Lathe must be flat, level and easily cleanable or the Lathe will not rotate properly and may become damaged.

3. The unpainted surfaces are coated with a waxy oil to protect them from corrosion during shipment. Remove coating with solvent cleaner or citrus-based degreaser. Avoid chlorine-based solvents.

DEFINITION OF TERMS

Bed: (1) Main supporting casting running the length of the lathe

Between Centers: A dimension representing the max. length of a workpiece that can be turned between Drive Center (8) and Tail Center (27). Also a method of holding a workpiece by mounting it between centers of the Headstock and the Tail Stock spindles.

Center (8, 27): A precision ground tapered cylinder with pointed tip and Morse Taper shaft. Used in Tail Stock (Tail Center) to support end of long workpieces. May be used in Headstock spindle to support work between centers at both ends.

Centerline: An imaginary line extending from center of Spindle through center of Tail Stock ram, representing central axis of Lathe around which the work rotates.

Tool Rest Holder (20): Movable platform where Tool Rest is mounted; it can be set at an angle to the workpiece (also known as compound slide and compound rest).

Face Plate (9): A metal plate with a flat face-mounted spindle to hold irregularly shaped work.

Facing: A lathe operation in which wood is removed from the end of a workpiece to create a smooth surface.

Head Stock (31): The main casting mounted on the left end of the Bed where the Spindle is mounted. Houses the Spindle Gears.

Morse Taper (MT): A taper of specific dimensions used to mate matching male and female parts together tightly. The Tail Stock has a MT-2 Morse Taper.

Spindle (2): Rotating shaft on which the Face Plate is mounted. It passes through the Headstock.

Swing: A dimension representing largest diameter workpiece a lathe

can rotate. The 14” x 40” Lathe means max. size workpiece diameter that can rotate without hitting Bed is 4” (6-11/16’) in diameter.

Tail Stock (24): Assembly that slides along the Bed and can be locked in place. Used to hold long workpieces in place or to mount a drill chuck.

Tail Stock Hand Wheel (29): Moves the Tail Stock in and out.

Tool Rest (21): A device mounted on compound that holds the cutting tool.

Turning: A lathe operation that removes material from the workpiece.

Ways: Surface along the top of the Bed on which the Tail Stock rides. The ways are aligned with the centerline of the lathe.

ADJUSTMENTS

To Adjust The Spindle Speed (RPM):

To prevent injury, make sure Power Switch (14) is in its **“OFF”** position and machine is unplugged from its electrical outlet.

1. Open Belt Cover (32) by releasing latch at top. Then use screwdriver (not included) to remove Screws (51) on side of Belt Cover. See Figure 6.

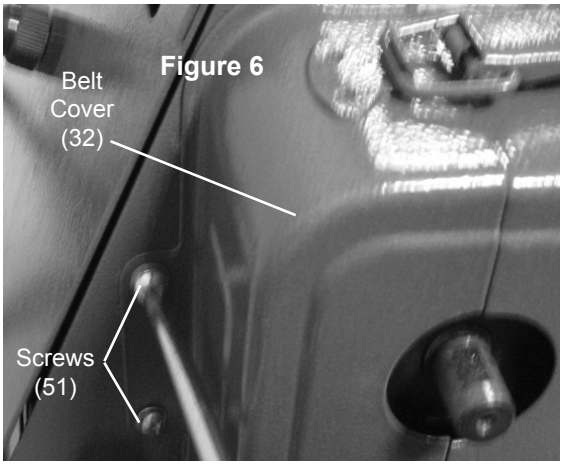
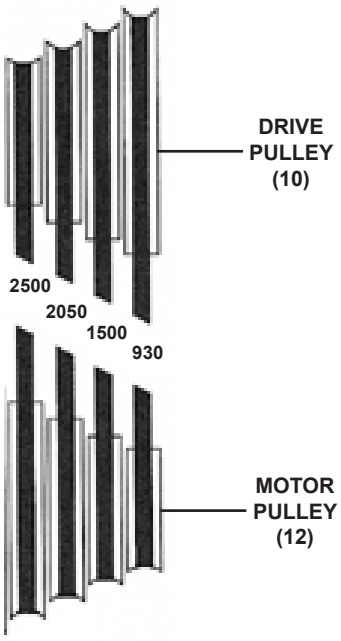


Figure 6

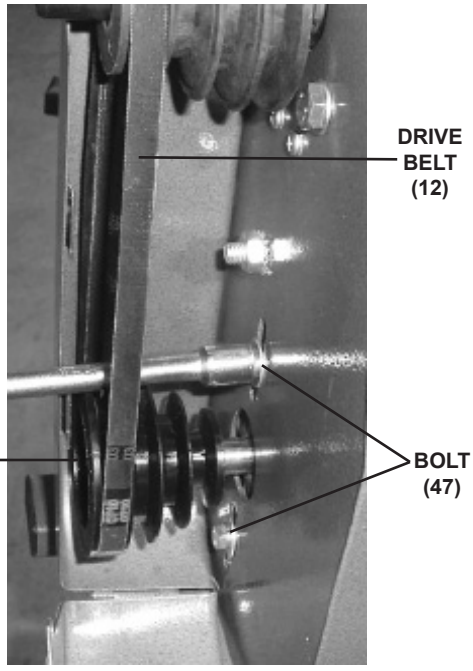
2. Locate desired speed on Speed Chart on inside of Belt Cover. See Figure 7.

FIGURE 7

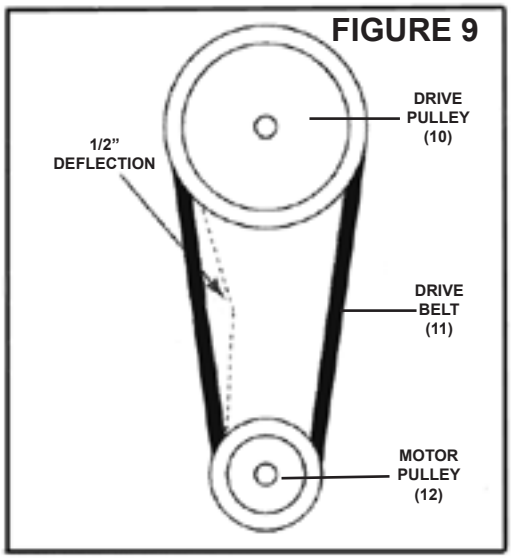


3. Use a hex socket to loosen Bolts (47) above and below the Motor Pulley. This will allow you to slide the Pulley upward or downward and adjust the Drive Belt (11) by hand. See Figure 8.

FIGURE 8



4. Move the Drive Belt to the proper grooves on the Drive Pulley (10) and Motor Pulley (12). Make sure that 1/2" of Drive Belt deflection is measured, as shown in Figure 9 below.



5. Replace the Belt Cover, snap the latch on, and use the Screws to secure the Cover back into place.

6. Refer to the Recommended Turning Speeds Chart below during use. See Figure 10.

FIGURE 10
Recommended Turning Speeds

Max Work Diameter In Inches	Speeds (RPM)
2"	2200~3200
3"	1600~2200
4"	1100~1600
5"	750~1100
6"+	750

Note: The above speeds can vary with different types of wood and the skill of the operator.
Sanding: Use the fastest speed possible without burning the wood.
Polishing and Finishing: Typically, polishing and finishing can be done at faster speeds than turning.

To Adjust The Tail Stock:

1. Use the Spanner to loosen the Lock Screw (19) under the Tail Stock (24). Then slide Tail Stock to the desired position. See Figure 11, below.

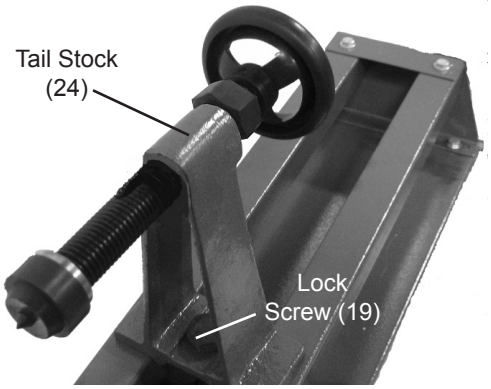


Figure 11

2. Use Spanner to tighten Lock Screw, securing Tail Stock in place.

To Adjust The Tool Rest:

1. Use the Spanner to loosen the Lock Screw (19) under Tool Rest Holder (20). Slide Tool Rest Holder to desired position. See Figure 12, below.

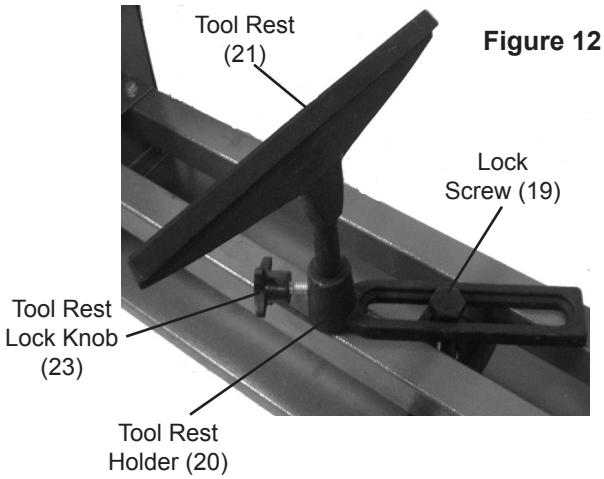


Figure 12

2. Use Spanner to tighten Lock Screw, securing Tool Rest Holder in place.

3. To adjust Tool Rest (21), loosen Tool Rest Lock Knob (23) and swivel Tool Rest as needed. The Tool Rest should be 1/8” above the center-line of the workpiece. Then tighten Tool Rest Lock Knob.

To Remove The Tail Center (27):

1. Loosen the Lock Screw (19) below the Tail Stock approximately half a turn counterclockwise. See Figure 13, below.

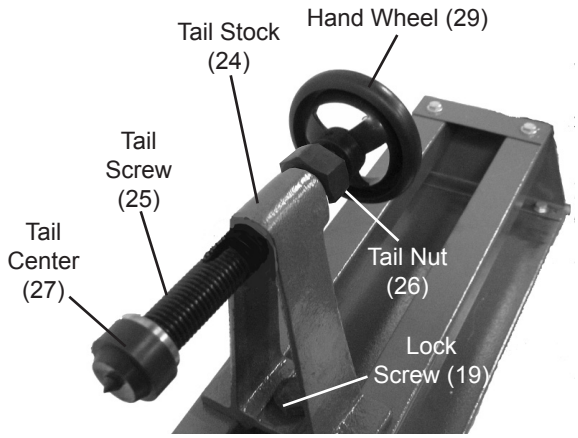


Figure 13

2. Rotate the Hand Wheel (29) counterclockwise until the Tail Screw (25) bottoms out, causing the Tail Center (27) to be forced off of the Tail Screw.

3. **WARNING!** The Tail Stock must always be locked in place while the Lathe is in use. The workpiece can be thrown from the Lathe if this step is not followed. The Tail Screw should not protrude from the Tail Stock more than 2” or the Tail Axis will not be supported enough. Failure to follow these warnings may result in personal injury.

The Power Switch Safety Switch:

1. The Lathe features a yellow Safety Switch on the Power Switch (14) to prevent unauthorized use. See Figure 14, below. To turn the Lathe on, first plug the Power Cord (15) into the nearest 120 volt, grounded, electrical outlet.

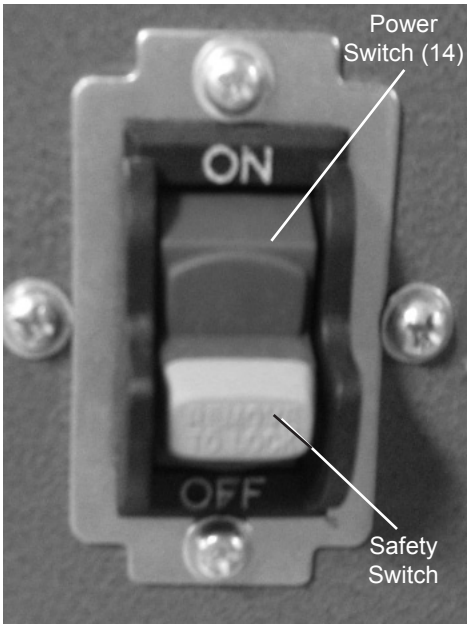


Figure 14

2. Insert the Safety Switch into the Power Switch. Move the Power Switch to the **“ON”** position. To turn the Lathe off, move the Power Switch to the **“OFF”** position.

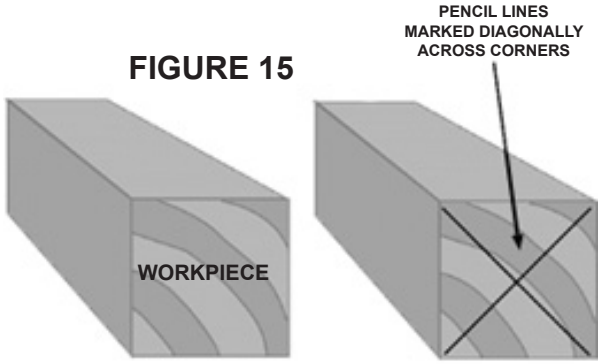
3. To lock the Power Switch in the **“OFF”** position, remove the Safety Switch and store it in a safe location away from children and unauthorized personnel.

OPERATING INSTRUCTIONS

1. With the Power Switch in its **"OFF"** position and the Lathe unplugged from its electrical outlet, make all necessary adjustments to the machine as previously discussed.

2. To set up a spindle turning operation, mark both ends of the workpiece by drawing diagonal lines from corner to corner. The intersection point of these two lines will indicate the center of the workpiece. See Figure 15.

FIGURE 15

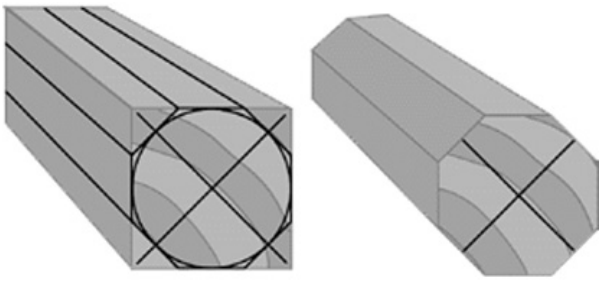


3. Use a wood mallet and punch to tap the point of the center of the workpiece so that it leaves a center mark.

4. Use a 1/8" drill bit to drill a hole 3/16" deep at the center mark on the workpiece.

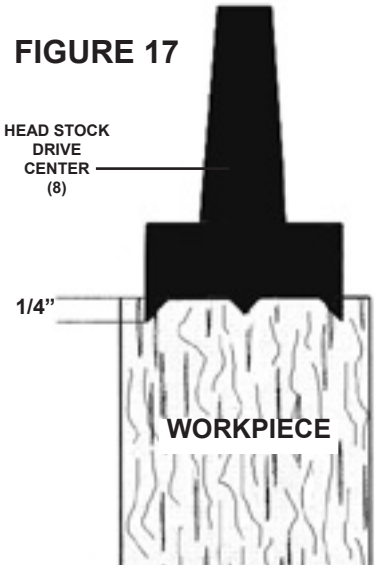
5. Cut the corners off the workpiece if it is over 2" x 2" to make turning safer and easier. See Figure 16, below.

FIGURE 16



6. Use a wood mallet to drive the Headstock Drive Center into the center of the workpiece at least 1/4" deep. See Figure 17, below.

FIGURE 17



7. Retract Tail Stock until only an inch of Tail Screw is protruding from Tail Stock. Measure combined length of wood stock and Headstock Drive Center. Loosen Screw (19) and set distance between the Tail Center and Spindle to a slightly wider distance than the above measured value.

8. Raise the wood stock up and thread the Head Stock Drive Center onto the Spindle. Turn Hand Wheel (29) until pointed end of Tail Center is wedged into the pre-punched end of the wood stock and end of the wood stock rests against the face of the Tail Center. Secure the Tail Stock then while holding the Hand Wheel, tighten the Tail Nut (26) with a wrench. **WARNING! Do not overtighten.**

9. With the workpiece still attached, mount the Headstock Drive Center onto the Main Spindle (2).

10. Position Tool Rest (21) approximately 1/4” away from workpiece and approximately 1/8” above center line.

11. Make sure to test the set-up by hand-turning the workpiece to ensure there is enough clearance all the way around before starting.

12. **WARNING!** Do not press workpiece too firmly with Tail Stock or the bearings will bind and overheat. Also, do not leave the workpiece too loose or the workpiece will spin off the Lathe.

13. To set up faceplate turning operation, remove Drive Center from Spindle.

14. Find center of the workpiece in the same way as when spindle turning.

15. Cut off the corners of the workpiece.

16. Center Faceplate on workpiece and attach it through Faceplate mounting holes with ***non-tapered*** *head wood screws.* See Figure 18, below.

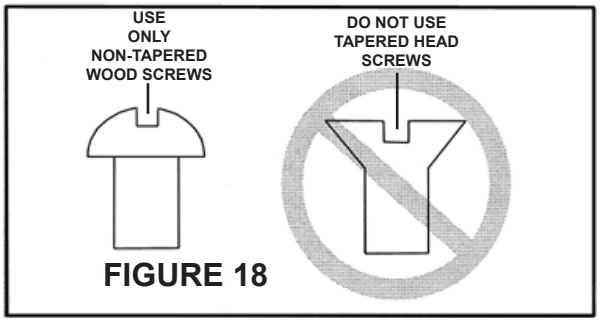


FIGURE 18

NOTE: Faceplate turning is typically done with open-faced workpieces like bowls. If screws cannot be placed in the workpiece, then a *backing block* can be glued to the workpiece and attached to the Faceplate with screws.

17. To mount the workpiece to a backing block, make the backing block from a piece of scrap wood cube with two flat and parallel opposite faces.

18. Identify and mark center of block.

19. Drill a 1/4” diameter hole through the center of the backing block.

20. Glue the center of the backing block to the center of the workpiece. See Figure 19, below.

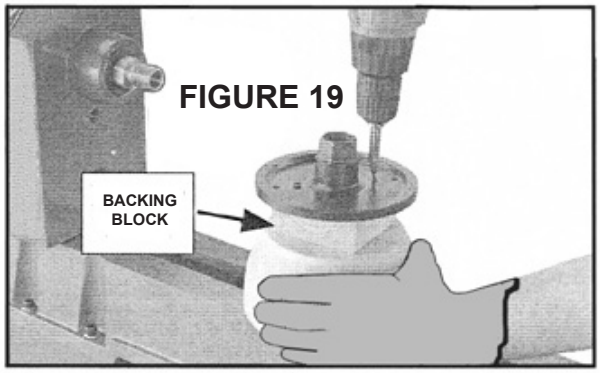


FIGURE 19

21. Clamp the backing block to the work-piece, and wait for the glue to dry according to the glue manufacturer’s recommendation. See Figure 19.

22. Thread Faceplate onto Headstock Spindle and tighten. See Figure 20.

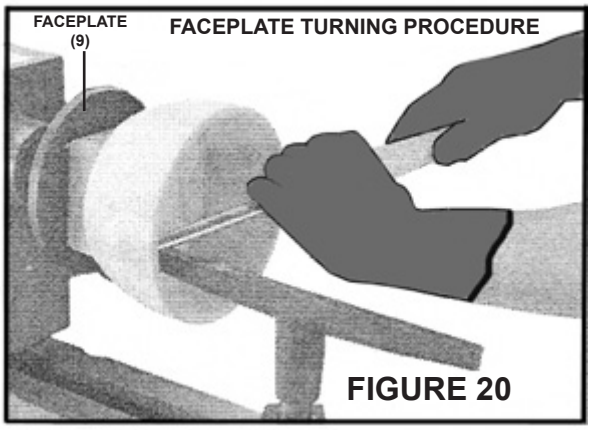


FIGURE 20

23. After turning, the workpiece can be sanded and finished before removing it from the Lathe.

24. **IMPORTANT:** Whenever sanding or finishing, remove the Tool Rest to

increase safety and gain adequate working room.

Other Wood Turning Rules to Follow:

1. Check where the speed is set before turning on the Lathe. Speed is a critical parameter in turning.
2. Don't let the tool touch the wood until after it is on the Tool Rest. If you do, the tool will slap down on the Tool Rest, resulting in possible injury to you or damage to the work piece.
3. Rub the bevel of cutting tools. The bevel is the reference for cutting tools.
4. The only part of the tool that touches the work piece is that which is in contact with the Tool Rest.
5. Always cut down grain.
6. Spin work to ensure clearance with Tool Rest.
7. Keep forward hand in contact with the Tool Rest.
8. Keep tools sharp.
9. Stop the Lathe to change Tool Rest positions.
10. Scrapers must be flat on the Tool Rest with the handle higher than the contact point with the work.
11. Do not sand with the Tool Rest in place. Get it well out of the way before operation.
12. Stop and check when anything feels or sounds wrong.

Attaching / Removing Sanding Paper (35):

1. Disconnect Lathe from power source.
2. To attach or remove Sanding Paper from Sanding Disc, first remove the Work Table assembly. To do so, loosen Set Screw (55) and pull the Table Bracket (39) away from the housing.
3. Peel about 3" of the paper backing and fold it back on the sanding paper. Position the opposite end of the Sanding Paper against the edge of the Disc (keeping the glued section away from the Sanding Disc). Lower the peeled face of the sanding paper against the Disc and press lightly to adhere. Tilt the top of the paper away, gently peel off the remaining backing paper, and press the sanding paper against the disc. Position a flat board against the sanding paper and apply pressure (see sanding paper manufacturers recommendations) to properly adhere.
4. To remove a damaged or worn sanding paper, simply peel the adhered paper. Soaking the Sanding Paper with rubbing alcohol may speed up the peeling application. Prior to attaching a new sand paper, always make sure that the surface of the Sanding Disc is clean and free of glue residue. If required, wipe with paint thinner. Use in a well-ventilated area and avoid inhaling the fumes.
5. Reattach the Work Table, following step 1 above in reverse order.

MAINTENANCE AND SERVICING

Procedures not specifically explained in this manual must be performed only by a qualified technician.

⚠WARNING TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:
Turn the Power Switch (14) of the Lathe to its "OFF" position and unplug the machine from its electrical outlet before performing any inspection, maintenance, or cleaning procedures.

TO PREVENT SERIOUS INJURY FROM MACHINE FAILURE:
Do not use damaged equipment. If abnormal noise or vibration occurs, have the problem corrected before further use.

1. BEFORE EACH USE, inspect the general condition of the Lathe. Check for loose screws, misalignment or binding of moving parts, cracked or broken parts, damaged electrical wiring, and any other condition that may affect its safe operation.
2. AFTER USE, clean external surfaces of the tool with clean cloth.
3. DAILY, lubricate all external moving parts with ISO 68 or SAE 20W oil.
4. Lubricate the Tailstock oiling point every five uses, or once per week if used frequently.
5. **⚠WARNING! If the Power Cord of this Lathe is damaged, it must be replaced only by a qualified service technician.**

PLEASE READ THE FOLLOWING CAREFULLY

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS LIST AND ASSEMBLY DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT, OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

TROUBLESHOOTING

Problem	Possible Cause	Possible Solution
Quality of cut is poor.	1. Cutting tool is dull. 2. Cutting too aggressively. 3. Cutting tool is too far above workpiece center line. 4. Lathe speed too slow.	1. Sharpen or replace cutting tool. 2. Use a lighter touch. 3. Lower cutting tool to max. 1/8” above the center line of workpiece. 4. Increase lathe speed.
Excessive vibration when turning thin workpieces.	1. Cutting tool is positioned below workpiece center line. 2. Cutting too aggressively.	1. Raise cutting tool to center line of workpiece. 2. Use a lighter touch.
Excessive vibration when turning larger workpieces or bowls.	1. Headstock and/or tailstock improperly located at ends of workpiece. 2. Workpiece is unbalanced.	1. Check for proper workpiece centers. 2. Trim stock until workpiece is more balanced.
Lathe will not turn on.	1. Cord not connected into electrical outlet. 2. Blown fuse or tripped circuit breaker. 3. Electrical outlet not working or is of wrong voltage.	1. Connect to electrical outlet. 2. Replace fuse or reset circuit breaker. 3. Make sure lathe is plugged into a working, 120 volt, grounded, electrical outlet.
Lathe will not turn off.	1. Damaged or faulty power switch and/or internal wiring.	1. Unplug the lathe from its electrical outlet immediately. Do not operate lathe until it is repaired by a qualified service technician.

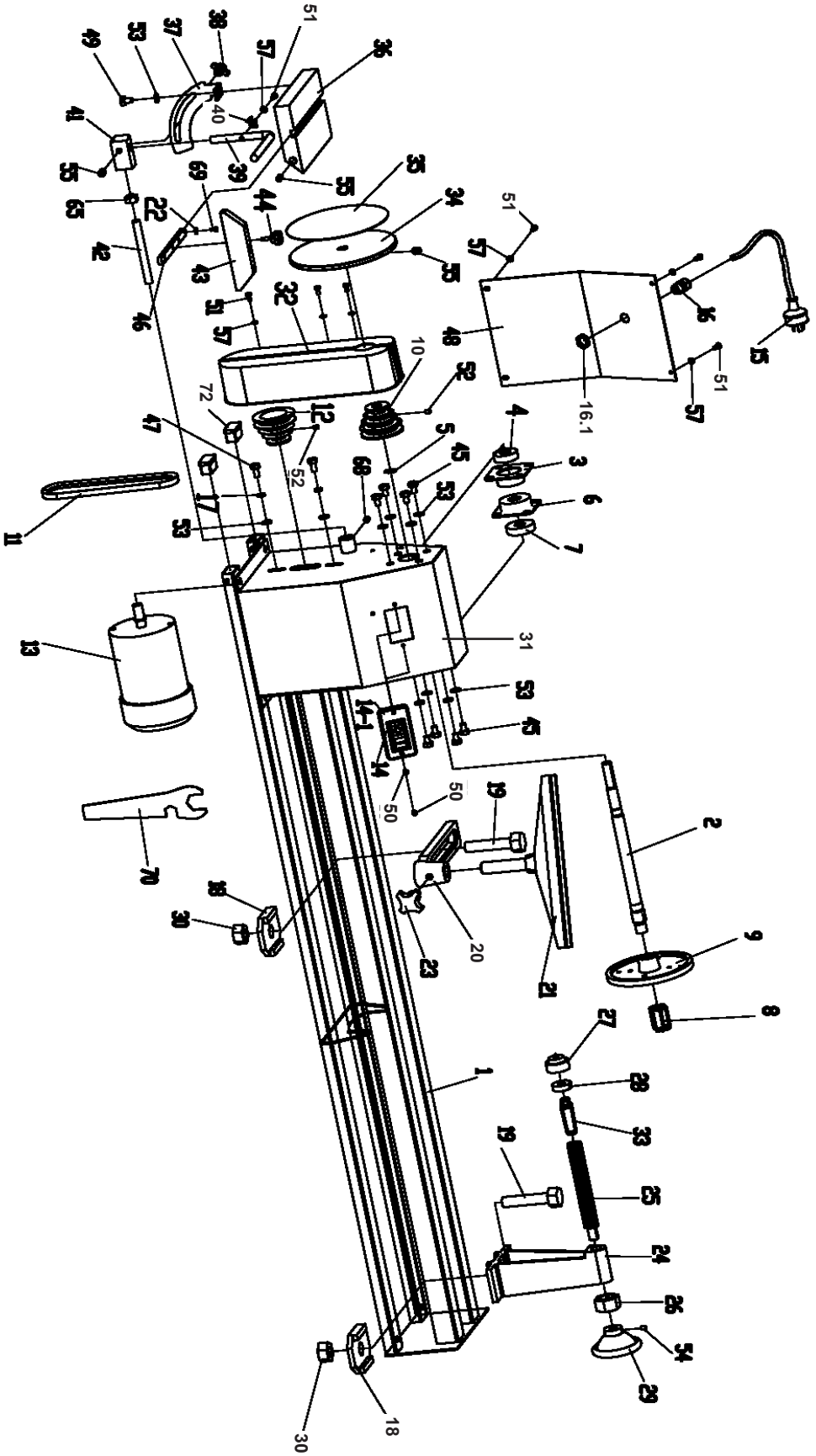
Follow all safety precautions whenever diagnosing or servicing the Lathe.

PARTS LIST

Part #	Description	Qty.
1	Bed	1
2	Spindle	1
3	Bearing Mount (Left)	1
4	Ball Bearing (6203)	1
5	C-Ring (R40)	1
6	Bearing Mount (Right)	1
7	Ball Bearing (6204)	1
8	Drive Center	1
9	Face Plate	1
10	Drive Pulley	1
11	Belt (8x510)	1
12	Motor Pulley	1
13	Motor	1
14	Power Switch	1
14-1	Switch Fixed Board	1
15	Power Cord	1
16	Strain Relief	1
17	Lock Washer	2
18	Bottom Plate	2
19	Lock Screw	2
20	Tool Rest Holder	1
21	Tool Rest and Shaft	1
22	Pointer	1
23	Tool Rest Shaft Lock Knob	1
24	Tail Stock	1
25	Tail Screw	1
26	Tail Nut	1
27	Tail Center	1
28	Ball Bearing (6201z)	1
29	Hand Wheel	1
30	Nut (M18)	2

31	Head Stock	1
32	Belt Cover	1
33	Center Shaft	1
34	Disc	1
35	Sanding Paper	1
36	Work Table	1
37	Table Angle Gauge	1
38	Lock Screw	1
39	Table Bracket	1
40	Pointer	1
41	Set Block	1
42	Rod	1
43	Miter Gauge	1
44	Miter Gauge Lock Knob	1
45	Bolt (M8x10)	8
46	Miter Gauge Slider	1
47	Bolt (M8x10)	4
48	Head Stock	1
49	Bolt (M8x10)	1
50	Screw (M4x8)	2
51	Screw (M5x10)	8
52	Set Screw (M8x8)	2
53	Washer (Ø8)	7
54	Set Screw (M8x8)	1
55	Set Screw (M8x10)	2
57	Washer (Ø5)	7
65	Nut (M12)	1
68	Set Screw (M8x10)	1
69	Pan Head Screw (M4x6)	1
70	Spanner	1
71	Hex Wrench (not shown)	2
72	End Caps	2

ASSEMBLY DIAGRAM



90 Day Warranty

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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Record Product's Serial Number Here:

Note: If product has no serial number, record month and year of purchase instead.

Note: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.